WORLD ASSOCIATION OF COPEPODOLOGISTS

MONOCULUS Copepod Newsletter

The Newsletter of the World Association of Copepodologists

Number 61 **June 2011**

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MONOCULUS Editor: Janet W. Reid
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ALCA alca@ola.icmyl.unam.mx
Planktonnet planktonnet@yahoogroups.com
Copepod List copepods@yahoogroups.com

Message from the President

As I look out the window at a heavily overcast winter sky and consider braving the cold and rain, I am looking forward to the 11th ICOC in Mérida, Mexico in July. Here, I will hand over to the new WAC President and Executive Council.

Over the last three years, your Executive Council has made a smooth transition to a new Treasurer and Webmaster. Our Treasurer, Chad Walter, has guided our finances so well that we are now in a relatively healthy position. The new web site should make it easier to share the load of keeping material up to date and also provide a place to store information we wish to pass on to each new Executive Council.

As I leave the Presidency we are in the process of contracting to provide online material for the Encyclopedia of Life Support Systems. The modest payment for this will go into the WAC accounts and will contribute to the Association?s ability to continue to support students and researchers from developing countries to go to the triennial meeting.

— Janet Bradford-Grieve, President
National Institute of Water and Atmospheric Research, New Zealand

The 11th International Conference on Copepoda

Announcement

The 11th ICOC is rapidly approaching and we are working hard at the Organizing Committee to ensure a nice, rewarding Conference. The deadlines for the submission of Abstracts have been reached and we are working on the arrangement of the entire program and the Abstract volume. The four symposia are ready as planned and we expect them to be a central axis during the Conference. We will have more than 150 oral and poster presentations about the many topics related to the knowledge of the Copepoda; each of them is a relevant contribution to the development of our guild.

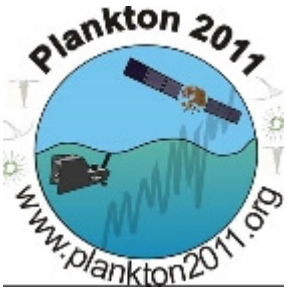
As for organizational matters, I take this opportunity to remind you all to send your travel information as soon as you have it so we can arrange the local logistics and transportation; also, if you have not been able to complete your payment, please let us know so we can find the best and easiest way to do this.

The proceedings of the Conference will be published as a special volume of the Journal of Natural History, details on how to submit your manuscripts are posted in the website; we hope to have a major participation in this process because this volume will be a good representation of what copepodology is today and how our discipline is currently moving.

We really hope to see you in Mérida in July; also, we remind you to bring light, comfortable clothes because the summer here is really hot. Overall, this will be a new opportunity for us to meet again our friends, colleagues, and collaborators; there will be plenty of time to hear the advances of our colleagues and also to talk about our favorite crustaceans. We will also have leisure time to enjoy the marvels of Mexico and the Yucatan culture.

We look forward to receiving you in Mexico.

— Eduardo Suárez-Morales
Chair, Organizing Committee, 11th ICOC
EL COLEGIO DE LA FRONTERA SUR
esuarez@ecosur.mx



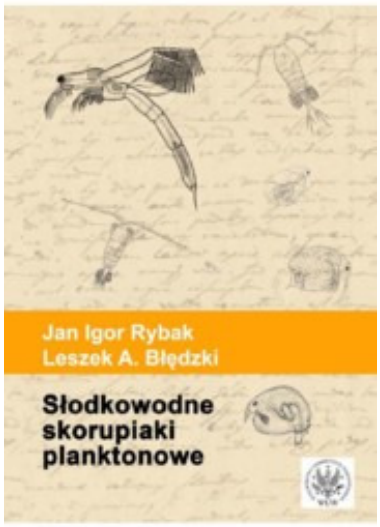
Plankton 2011 Symposium

To celebrate the 80th Anniversary of the Continuous Plankton Recorder Survey, the Sir Alister Hardy Foundation for Ocean Science will host Plankton 2011 - an international symposium on plankton biodiversity and global change in the aquatic systems.

It will seek to identify causes and consequences of long-term changes in plankton communities in fresh and marine waters.

Dates: 22-23 September 2011
Location: Plymouth Guildhall, England, U.K.
Last date for registration: 31 August 2011
http://www.plankton2011.org

New Books



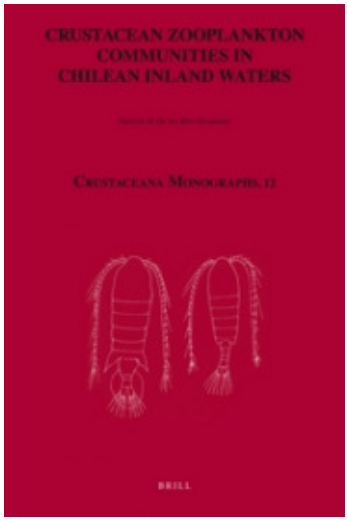
Słodkowodne skorupiaki planktonowe Klucz do oznaczania gatunków [Freshwater Planktonic Crustaceans: Key to the Species]

By Jan Igor Rybak & Leszek A. Błędzki
2010. Warsaw University Press, Warsaw. 368 pp. ISBN: 978-83-235-0738-3. [In Polish.]

Translated from the publisher's website:

Planktonic crustaceans (Cladocera, Copepoda) are the most common aquatic invertebrates. This study includes all species of freshwater planktonic crustaceans occurring in Poland and neighboring countries. This is the first of this type of publication in Poland, makinng up for decades of arrears in this regard. It uses the latest information on the systematics of these groups - there is not, as yet, a similar counterpart in other languages. The section on the determination of species includes an illustrated dichotomous key, which greatly facilitates its use in practice.

This publication is addressed to scientists conducting research in the field of invertebrate zoology and systematics, and natural sciences students of any university, as well as people working in institutions dealing with environmental monitoring, water intakes in the laboratory, sanitation systems or sewage treatment plants. Nature and biology teachers in schools of various levels will also be interested.



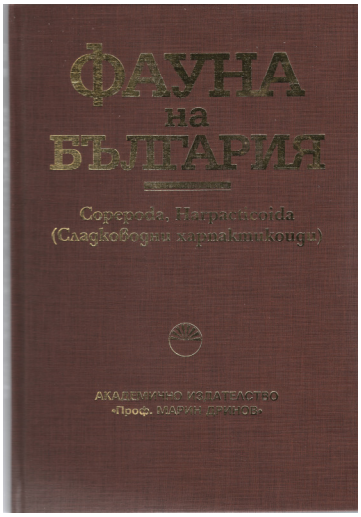
Crustacean Zooplankton Communities in Chilean Inland Waters

By Patricio R. De los Ríos-Escalante
2010. Crustaceana Monographs 12. Brill, Leiden. 109 pp. ISBN: 978 90 04 17460 3.

From the publisher's website:

"The crustacean zooplankton of Chilean inland waters has been studied mainly in large Patagonian lakes, while that plankton in other Chilean water bodies has as yet been insufficiently investigated. The species actually reported upon herein require revision as regards their taxonomy and biogeography. On the basis of studies in the Patagonian lakes, oligotrophy has been determined as the main factor regulating zooplankton assemblages, whereas in southern shallow ponds the main regulating factors are oligotrophy and conductivity combined. No detailed studies for other Chilean water bodies are available to date.

This book provides a checklist with updated information of the species of crustacean zooplankton in Chilean inland waters, while the results of an ecological study offer data for understanding the distribution and abundance of those faunal elements in the area."



Copepoda Harpacticoida (Freshwater Harpacticoida). Fauna Bulgarica 29.

By Apostol Metodiev Apostolov

2010. Editio Academica "Professor Marin Drinov", Sofia. [In Bulgarian.]

The monograph includes descriptions of 100 species of freshwater Harpacticoida (Crustacea, Copepoda) from surface and ground water in the territory of Bulgaria. Described species belong to 14 families, 18 genus and 8 subgenus whose distribution covers the six kingdoms.

For each species is given a description of the important taxonomic features, bionomic, habitat and individual variability. Detailed questions are addressed on the origin and evolution, systematic and biology of modern Harpacticoid fauna. Presented are a geographical location and a zoogeographical distribution of freshwater Hapracticoid fauna of Bulgaria on genus and species level. Given is a data of horizontal and vertical distribution of described species and their bionomic in accordance with the biotope of habitat. Special attention is paid to the origin and species composition of ground waters Harpacticoids compared to ground water Harpacticoids fauna of the Balkan countries.

The monograph tables are designed to determine the families, genus and species. The description of the species is illustrated with detailed drawings of individual body parts that have significance for taxonomic identification.

— contributed by
Apostol Apostolov
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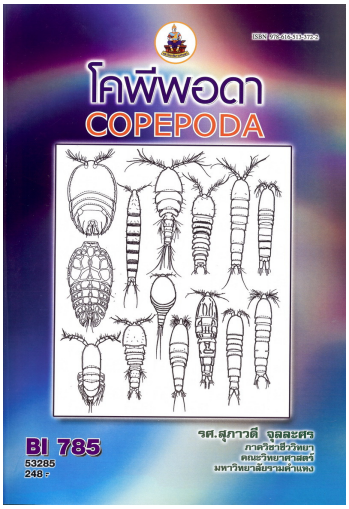


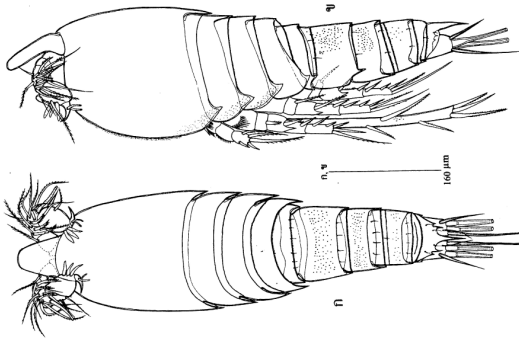
Copepoda

By Supawadee Chullasorn

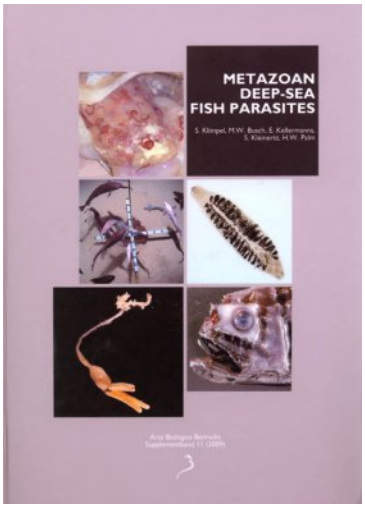
2010. Ramkhamhaeng University Press, Bangkok. 265 pp. ISBN: 978-616-513-372-2. [In Thai.]

A general introduction to copepods, with particular emphasis on harpacticoids. The first chapters introduce the general structure of harpacticoids, their biology, and methods for their collection and extraction from samples, taxonomic examination, description, classification, and culture. The overall classification of the Copepoda and of the orders Harpacticoida, Cyclopoida, and Calanoida are explained.

Ten harpacticoid families reported thus far from marine habitats of Thailand are presented, with illustrations of one representatives of each. In the text, the line drawings and photographs are printed in black and white, but supplementary color plates of photographed specimens are available from the author.



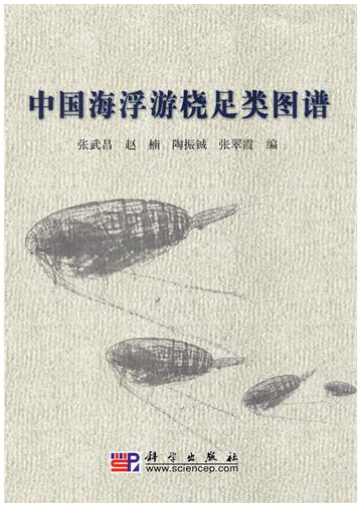
Longipedia thailandensis
Chullasorn & Kangtia, 2008



Metazoan Deep Sea Fish Parasites

By Sven Klimpel, Markus W. Busch, Esra Kellermanns, Sonja Kleinertz and Harry W. Palm
2009. Acta Biologica Benrodis, Supplement 11. Verlag Natur & Wissenschaft, Solingen. 384 pp. ISBN-13: 9783936616613

A new and detailed compilation of metazoan deep-sea fish parasites. The list presents the parasite species together with their respective hosts that have been reported from the deep-sea environment below 200 m.



An Illustrated Guide to Marine Planktonic Copepods in China Seas

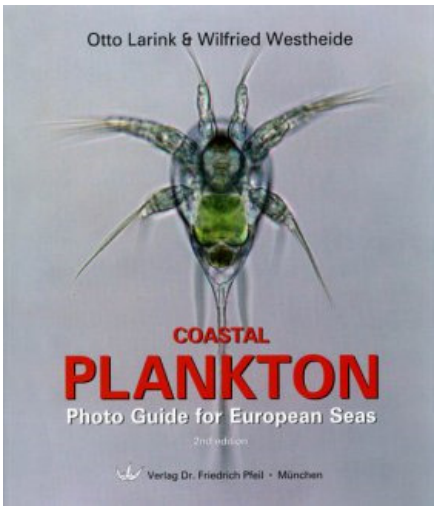
中国海浮游桡足类图谱

By ZHANG Wuchang, ZHAO Nan, TAO Zhencheng and ZHANG Cuixia
2010. China Scientific Book Service Co., Beijing. 468 pp.
ISBN: **9787030282460 [In Chinese.]**

Translated from the publisher's website:
Introduction:

This book of lists and maps of the planktonic copepods of China's seas summarizes and identifies our marine planktonic copepod species. Over the years, the classification system of copepods has changed, with some changes in scientific names. This book summarizes the changes in the species list; for our classification of planktonic copepods of our country, the maps were grouped, for ease of access, into the Bohai Sea, Yellow Sea, East China Sea and South China Sea (including east of Taiwan); and statistics are given for the marine planktonic copepod species list.

The book is suitable for marine biology researchers, teachers and students, staff monitoring the marine environment, and aquaculture managers.



Coastal Plankton: Photo Guide for European Seas

By Otto Larink and Wilfried Westheide
2011. Second Edition. Verlag Friedrich Pfeil, 143 pp., 60 color photo plates.

From the publisher's website:

"And here is the Second Edition. Its most evident new feature is the considerable increase in the number of photographs, from 660 to now 930. In particular, numerous Mediterranean species have been added, leading, among others, to the inclusion of entirely new plates on trematodes, sipunculids, pelagic gastropods, several crustacean taxa, enteropneusts, and holothurians."

Dr. Hrbáček sampling from Slapy Reservoir
© Jan Fott, 2005

Jaroslav Hrbáček
12 May 1921 – 16 July 2010

Doc. RNDr. Jaroslav Hrbáček, Dr.Sc., the author of pioneering works and ideas on the regulatory effect of the selective predation on species structure of a community and the whole metabolism of an ecosystem (top-down control), died last summer on July 16, 2010. His life is a typical example of what many Central-European professionals had to pass through during the twentieth century.

J. Hrbáček was born on May 12, 1921 in Brno, the second largest town of what is now Czech Republic. He grew up in Bratislava (now the capital of the other state, Slovak Republic) where his father was one of the Czech administrators who helped to establish a functioning joint state, at that time the Czechoslovak Republic. At the onset of the Nazi occupation of the Czech country and the separation of Slovakia as a quasi-independent country in 1939, the Czech people had to leave Slovakia and the family moved to Prague, the capital of the occupied „Protectorate Böhmen und Mähren". In the autumn, J. Hrbáček enrolled to study medicine at Charles University; but on the anniversary of the Czechoslovak Independence Day, October the 28th, university students demonstrated against the occupation of the country. One of Hrbáček's medical-school colleagues in a group close to him was shot by the Nazis and later died, and his funeral became a pretense for the Nazis to close the Czech universities for the rest of the Second World War, to execute the student leaders, and to jail thousands of students. (November the 17th became later the International Student Day, and fifty years later, in 1989, the starting point of what is known as the Czech „Velvet Revolution" which ended another, Soviet occupation.) Moreover, Hrbáček was born in 1921 and all the men of that class had to work for Nazi, mostly in factories in Germany. He was lucky enough to stay at home and to work for a drug company. He used the war period to learn about animals and became interested in water beetles, which later resulted in his studies of their breathing and his membership in the British Royal Entomological Society.

After the Second World War, his interests in animals prevailed and Hrbáček began to study biology at the Faculty of Science, Charles University, where he later became an assistant professor and in the 1950s an associate professor. Since he was open to new ideas in ecology and to modern methods in limnology, he soon atracted a group of younger colleagues similarly interested in productivity processes and the metabolism of aquatic communities. He was also open to practical questions from laymen, and thus he wanted to find out why the fishermen could not catch fish (i.e., fish interesting for fishermen) in pools and backwaters in the Elbe River inundation area close to Prague. The first surprising result of his field experiments was that the pools had very dense ovestocked populations (up to 10,000 specimens per hectare) of small and very slowly growing planktivorous fish, which were not controlled by any piscivores. These fish were not important for fishermen. The second, even more surprising and more important result, was the tremendous change of the whole community after these fish were removed. Dense populations of small zooplankton species were replaced by large *Daphnia,* which greatly decreased the phytoplankton density. This resulted in changes in nutrient concentrations and even in increased bottom temperatures due to higher transparency. Hrbáček had quickly comprehended the basic role of the fish predation in the control of processes in the freshwater community, and presented his findings at the Zoological Congress in London, 1958 (Hrbáček 1960) and the International Limnological Society in Vienna, 1959 (Hrbáček et al. 1961). This challenging idea – not easily accepted anywhere, not only at home – later found its formulation in the size-efficiency hypothesis (Brooks and Dodson 1965), and led to the ideas of biomanipulation as a means of lake restoration (Shapiro et al. 1975), the cascade hypothesis (Carpenter et al. 1985), and the top-down-bottom-up-theory (McQueen et al. 1989), postulating what Hrbáček stated earlier saying that „… the biocenotic relations between the fish stock and the plankton …. are at

least as important as the influence of the physical and chemical factors for the formation of the plankton association …“ (Hrbáček et al. 1961).

After the period of backwater studies using very primitive field facilities, Hrbáček turned his attention to the productivity processes in carp ponds, a very numerous type of water body (shallow artificial lakes of a few or a few tens of hectares, built mostly four to five hundred years ago for cultivation of common carp) in this country. The university field station near Blatná became the centre of this programme, and the management of carp ponds offered the advantage of relatively precise data about the fish population. But soon another task arose, bringing up a quite different type of water ecosystems: there were numerous river reservoirs constructed in this country, which offered the chance to find out where and under what conditions the biomanipulation of fish stock can lead to the control of water quality. Hrbáček with his team left the university and accepted an offer to establish a new Hydrobiological laboratory within the Academy of Sciences. Again he had to build not only a new laboratory, but also a new field station at the Slapy Reservoir about 50 km south of Prague, which became his second and later main workplace. Numerous famous limnologists either visited him at this field facility or worked there for a few months. To name just some: R. de Bernardi, P.D.N. Hebert, R.H. Peters, A. Duncan, C.H. Fernando. These continuing contacts with the scientific world in a period of strongly limited chances to travel abroad were extremely important for young Czech limnologists, as were the seminars held together with Hrbáček’s former workplace, the Department of Hydrobiology at Charles University. A side effect of the Slapy station was the generation of one of the longest existing array of data sets from the reservoir monitoring, which was useful as a background for any short-term project, and even more for evaluation of long-term changes later.

Although Hrbáček did not publish any paper devoted solely to copepods, his holistic approach to the plankton community did not omit any important component of this community. He strongly recommended to all his students to choose one group of organisms in which they should become specialists, including the detailed knowledge of its taxonomy. Thus his team consisted of people each of whom was able to cover some important group of freshwater organisms. Since cladocerans play the central role in the productivity processes in plankton, Hrbáček’s main interest soon turned to the taxonomy of the genus *Daphnia,* but not only investigating details in their morphology (sibling species in the *D. pulex* group, Hrbáček 1959a), but also examining their growth and reproduction, feeding, etc. He was able to prove experimentally the influence of water turbulence on the development of helmets in the limnetic *Daphnia* species (Hrbáček 1959b). In these laboratory studies, he found great support in the careful and patient work of his wife, Dr. Marta Hrbáčová-Esslová. Together they published a series of papers on growth and reproduction of *Daphnia* living in various habitat conditions. In the early days of the modern approach to taxonomy, before the methods of molecular biology enabled the detailed evaluation of species positions, Hrbáček invited Professor Hebert to Slapy and they examined various *Daphnia* populations using the allozyme method (Hebert et al. 1989). Later, when long-term data from various water habitats allowed him to evaluate some regular processes and some trends, he also turned to the role of copepods, especially in his last period of life, also oriented to the hydrobiology of the Lužnice River floodplain.

For many years, Hrbáček was successful leading his lab and team through uneasy times, with mostly difficult and poor facilities for science. Nevertheless the political management in the 1980s was not satisfied with the situation in Hrbáček’s lab – simply because there was no member of the Communist Party among the members of his team. Therefore, a few weeks before his 60th birthday, Hrbáček was dismissed from his position and replaced by an insignificant person from outside. He then took great satisfaction in his subsequent election as an Honorary Member of the Ecological Society of America.

Untiringly, Hrbáček continued in his work, mostly utilizing long-term data from the Slapy Reservoir. The Velvet Revolution opened new possibilities, and Hrbáček, now in his 70s, joined the group of botanists studying the floodplain of the Upper Lužnice River. Here he obtained some remarkable results, among others, about the high resilience of cyclopoid populations in flooded pools after the flood. Many students from developing countries remember him well from the field part of the Austrian UNESCO Courses in Limnology held in the Trebon pond area, where he for many years taught them how to measure the productivity parameters of the plankton community using the simplest available equipment. Until the last days of his life, he sampled the Slapy reservoir every week and completed the series of long-term data by this dense set.

All of us who had the great chance to work with Dr. Hrbáček, and many others who met him, will remember him forever for his generous ability to share his knowledge and experience, as well as for his always critical thinking and honest treatment of his own results.

— Zdeněk Brandl
Dept. of Ecosystem Biology
Faculty of Science, University of South Bohemia
České Budějovice, CZ-370 05 Czech Republic

References:

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News from or about Members

From Y. Ranga Reddy:

1. We have just completed a major research project titled "Biodiversity of subterranean groundwaters of India, with special reference to Copepoda and Bathynellacea (Crustacea)"
During this Project (February 2008-January 2011) my student, Mr. V. R. Totakura and I encountered, inter alia, a number of new stygobitic copepods including several new taxa of Parastenocarididae and small Cyclopidae.

2. This Department organized an "Internationational Conference on Biodiversity& Aquatic Toxicology" on February 12-14, 2001.

Cordial regards,
Ranga
— Y. Ranga Reddy, Ph. D.
Professor Emeritus, Department of Zoology
Acharya Nagarjuna University
Andhra Pradesh, INDIA

With RV Araon to the high Arctic Ocean -

The first Korean icebreaker RV Araon came back from a successful expedition for about two months to the high Arctic Ocean. This was its second mission after the first voyage to the Antarctic. The Filipino student Mary Mar Noblezada (now at the University of Tokyo) participated as a member of the lab of Hans Dahms in Seoul, in order to study copepods in this remote part of the world oceans. Under extreme envrionmental conditions, polar organisms have found their own way to survive. This also holds for the diverse group of copepods that occur even in polar regions from the deep-sea benthos throughout all pelagic waters and sea-ice to the interstitial of shores, being free-living, or associated or parasitic to aquatic plants and animals. They are here not only important for benthic and particularly pelagic food-chains and the conversion of matter and energy, but copepods also provide models for several branches of life science. Their taxonomic diversity suggest suitable indications for environmental disturbances in polar regions and elsewhere. The ease of cultivation makes some copepod species helpful models for various aspects. However, applications for life-science or for human welfare will not be possible without intensified basic research. Only an approach studying many of the unknown taxa and their biology and ecology will allow the development of new innovative approaches - such as in the understanding of adaptations to the polar envrionment.

— Hans-Uwe Dahms
Green Life Science Department
Sangmyung University, Seoul, SOUTH KOREA

WAC Treasurer's Report

World Association of Copepodologists

2010 Annual Report

The World Association of Copepodologists (WAC) account balances (in US $). I assumed the Treasurer position in January 2009, at which time I established the new checking and savings accounts, and a new Paypal online membership dues payment system. The establishment of the PayPal system allows members to pay dues quickly, safely and easily. Prior to this, dues were paid on a triennial basis from those members who attended the conferences. Using the PayPal system reduces the amount of cash that has to be collected, managed and carried back to the US bank accounts.

	Savings	Checking	PayPal	Total
Jan 1 2010	29,608.75	5,325.47	471.59	35,405.81
Deposits	2,919.43[1]	2,700.00	5,200.00	10,819.43
Interest	29.71	0.00	0.00	29.71
Withdrawal	0.00	0.00	(4,919.43)[2]	(4,919.43)
Fees	0.00	0.00	(153.35)[3]	153.35
Dec 31 2010	32,557.89	8,025.47	598.81	41,182.17

1 transfer from PayPal to Savings

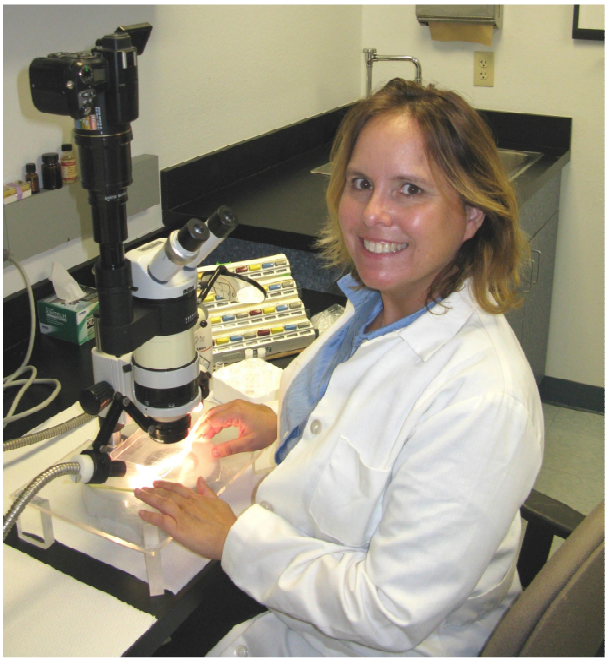
2 transfer to 11th Conference Mexico $2,000 & $2,919.43 from PayPal to savings

3 service fee of 2.2% per + .30 per financial transaction (non-profit rate) subtracted at time of donation

NOTE: The complete Treasurer's Report is posted on the WAC website at:

http://www.monoculus.org/en/triennial-reports

— Submitted by T. Chad Walter
3/29/2011



New Monoculus Editor Adelaide Rhodes

Welcome to the new Editor of *Monoculus*, Adelaide Rhodes. Adelaide is presently working at the Smithsonian Marine Research Station in Florida. Her email is: RhodesA@si.edu.

Former Editors Horst Kurt Schminke, Hans-Uwe Dahms, and Janet Reid wish Adelaide the very best success in her new position!

Editor's Notes

Grateful thanks to all the contributors for this number: Apostol Apostolov, Zdeněk Brandl, Hans Dahms, Ranga Reddy, and Chad Walter.

Thanks also to several people who kindly notified us of their recent publications, in most cases including pdf copies: Ron Burton, Hans Dahms, Marleen De Troch, Ione Madinabeitia, Vladislav I. Monchenko, and Y. Ranga Reddy. These references have been posted online on the Smithsonian's "World of Copepods" website, as part of the C.B. Wilson Copepod Library database (http://invertebrates.si.edu/copepod/wilson.htm) and added to the Monoculus Library collection, and will be included in the next *Monoculus Literature Supplement*. All readers are strongly encouraged to remember these libraries when you publish new contributions, and also if you need a source for difficult-to-find articles.

This is the last number of *Monoculus* that I have had the pleasure of editing. My profoundly felt gratitude goes to Rubens Lopes, former WAC Webmaster, and his students for much moral encouragement and material help during the process of taking *Monoculus* online. In that early stage, Hans Dam kindly arranged to host the WAC website through the University of Connecticut. Long-time readers will be able to infer the progress in enlarging the website capacity through the years, by the evolution of *Monoculus* from entirely black-and-white files to the color that we enjoy today. Rubens and his students also did a heroic job in getting the earlier, printed versions of Monoculus scanned and posted online, including correcting (most of) the inevitable errors introduced by the scanning process.

In the next stage, Pedro Martínez Arbizu stepped up to take over as Webmaster and returned the active website to the domain originally established at Oldenburg University. Pedro also assumed the responsibility for maintaining the Monoculus Copepod Library. Chad Walter continues to maintain the Wilson Copepod Library, serves as WAC Treasurer, has taken a number of initiatives in conjunction with both the WAC and the World Register of Marine Species (WoRMS) database, which now hosts the taxa list at www.marinespecies.org/copepoda, to improve access to bibliographic information and taxon names of copepods.

Over the past nine years, the three WAC Presidents Kurt Schminke, Shin-ichi Uye, and Janet Bradford-Grieve have steadfastly fostered initiatives to modernize WAC operations, to maintain responsible oversight of the WAC funds, and to use these resources efficiently to support not only the International Conferences on Copepoda, but also student participation in the conferences and training courses. General Secretary Eduardo Suárez-Morales has faithfully maintained the membership list and served as the point of communication for members and interested persons. The members of the Executive Committee have donated their own time to various of these activities as well.

It has been an immense pleasure to work with all these friends and colleagues, who have volunteered immense amounts of time to promote our Association and its functions in many ways. I thank all the contributors who have responded to requests for articles and have sent news items, photos, cartoons, and even poetry. The good opinion and positive response of the community reflects the accomplishments of the previous Editors Kurt Schminke (with the help of Gerd Schriever) and Hans Dahms in making *Monoculus* the newsletter "of record" for copepodologists. I am confident that Adelaide will enjoy the same level of positive support..

— Jan Reid, outgoing Editor
Trumansburg, U.S.A.

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Membership in the WAC: Any person interested in any aspect of the study of Copepoda is eligible for membership in the WAC. Contact the General Secretary for an application form and other information.
Dues: Dues of US $20.00 per annum are payable by students & researchers from less-developed countries; $35 for Standard Members; $200 (or more) for Sponsors; and $1000 (or more) for Life Members. Members who have difficulty paying dues may apply to the President and the Executive Council for a waiver or reduction. Dues may be paid in advance. Contributions to the WAC are tax-deductible in the U.S.A. WAC accepts personal checks issued in local currencies, made payable to WAC. Checks should be sent by mail to the Treasurer of the WAC. Dues may also be paid in person at WAC conferences. Members who are more than two years in arrears will automatically have their membership terminated.
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